
V. REMARKS

Claims 1, 2, 6 and 9 are rejected under 35 U.S.C. 102(e) as anticipated by Watkins (U.S. Patent No. 6,317,027). The rejection is respectfully traversed.

Watkins teaches a proximity reader for a radio frequency identification system in which identification tags have transponder circuits powered by a radio frequency transmission of the reader at a resonant frequency of the tags for inducing a coded response. The reader has a frequency generator device for generating a center frequency and a plurality of discrete side frequencies spaced from each other and from the center frequency. An antenna circuit is connected for radiating each of the center frequency and the side frequencies in a sequence to interrogate transponder tags and a microprocessor connected to the antenna circuit receives and decodes transponder tag information communicated by loading down a radio frequency field radiated by the antenna circuit at any single one of the center and side frequencies. An antenna resonance tuning device includes a selectable impedance in the antenna circuit and tuner program device operative in step with the sequence for selecting discrete values of the impedance corresponding to each of the center frequency and the discrete side frequencies to substantially optimize the reactance of the antenna circuit for maximum radiated signal at each of the center frequency and side frequencies thereby to maximize operative range of the transmitter and for storing the values for reference by the tuner program device.

Claim 1, as amended, is directed to an antenna device of an interrogator having a resonance frequency of a predetermined value which constitutes an automatic identification system by exchanging information with an IC tag attached to an object to be identified by electromagnetic coupling. Claim 1 recites that the antenna device includes an antenna element and a capacitor which is connected in series to the antenna element and has a variable capacitance to maintain the resonance frequency of the antenna device at the predetermined value.

It is respectfully submitted that the rejection is improper because the applied art fails to teach each element of claim 1 as amended. Specifically, it is respectfully submitted that the applied art fails to teach an antenna device that includes an antenna element and a capacitor which is connected in series to the antenna element and has a variable capacitance to maintain the resonance frequency of the

antenna device at the predetermined value. By contrast, Watkins teaches a proximity reader that is programmed for determining and storing optimum antenna in patent values to achieve patent antenna resonance at each of multiple operating frequencies. As a result, it is respectfully submitted that claim 1 is allowable over the applied art.

Claims 2, 6 and 9 depend from claim 1 and include all of the features of claim 1. Thus, it is respectfully submitted that the dependent claims are allowable at least for the reason claim 1 is allowable as well as for the features they recite.

For instance, claim 6 recites the switch is a semiconductor switch which is controlled by a control circuit for detecting a deviation of the resonance frequency and controlling the resonance frequency to a predetermined frequency. Claim 9 recites that a predetermined communication distance is ensured by varying a drive voltage of the antenna device.

Withdrawal of the rejection is respectfully requested.

Claims 1-5, 7, 9 and 11 are rejected under 35 U.S.C. 102(b) as anticipated by Suga et al. (U.S. Patent No. 6,321,067). The rejection is respectfully traversed.

Suga teaches a power transmission system in which power is transmitted by radio wave from a power transmission device to an IC card that includes a converter circuit, a detector circuit portion and a transmitting unit. The converter circuit includes a first antenna having a resonance circuit for receiving the transmitted radio wave and a rectifier circuit which converts an induced power received in the antenna into a DC voltage in rectifying it with the DC voltage being supplied to an internal circuit. The detector circuit portion detects one of the induced power obtained from the first antenna of the converter circuit and a voltage corresponding to the induced power. The transmitting unit transmits information by a radio wave to the power transmission device. The information is concerned with either the induced power or the voltage detected by the detector circuit portion. The power transmission device includes a receiving unit which receives the information by the radio wave being transmitted from the transmitting unit of the IC card, a control power supply circuit which controls an output of high frequency power based on the information received by receiving unit and a power transmitting unit having a second antenna for transmitting the output of high frequency power by the radio wave. The output of high frequency power is controlled by the control power supply circuit.

For the reasons discussed above, it is respectfully submitted that the rejection is improper because the applied art fails to teach each element of claim 1. Specifically, it is respectfully submitted that the applied art fails to teach an antenna device that includes an antenna element and a capacitor which is connected in series to the antenna element and has a variable capacitance to maintain the resonance frequency of the antenna device at the predetermined value. As a result, it is respectfully submitted that claim 1 is allowable over the applied art.

Claim 3, as amended, is directed to an antenna device of an interrogator having a resonance frequency of a predetermined value which constitutes an automatic identification system by exchanging information with an IC tag attached to an object to be identified by electromagnetic coupling. Claim 3 recites that the antenna device includes an antenna coil having taps which are switched from one to another to maintain the resonance frequency of the antenna device at the predetermined value.

It is respectfully submitted that the rejection is improper because the applied art fails to teach each element of claim 3 as amended. Specifically, it is respectfully submitted that the applied art fails to teach an antenna device that includes an antenna coil having taps which are switched from one to another to maintain the resonance frequency of the antenna device at a predetermined value. As a result, it is respectfully submitted that claim 3 is allowable over the applied art.

Claim 4, as amended, is directed to an antenna device of an interrogator having a resonance frequency of a predetermined value which constitutes an automatic identification system by exchanging information with an IC tag attached to an object to be identified by electromagnetic coupling. Claim 4 recites that the antenna device includes an antenna coil and an inductor which is connected in series to the antenna coil and having taps which are switched from one to another to maintain the resonance frequency of the antenna device at the predetermined value.

It is respectfully submitted that the rejection is improper because the applied art fails to teach each element of claim 4 as amended. Specifically, it is respectfully submitted that the applied art fails to teach an inductor which is connected in series to an antenna coil and having taps which are switched from one to another to maintain the resonance frequency of an antenna device at the predetermined value. As a result, it is respectfully submitted that claim 4 is allowable over the applied art.

Claim 7, as amended, is directed to an antenna device of an interrogator having a resonance frequency of a predetermined value which constitutes an automatic identification system by exchanging information with an IC tag attached to an object to be identified by electromagnetic coupling. Claim 7 recites that the antenna device includes an antenna coil and a variable inductor that is connected in series to the antenna coil for maintaining the resonance frequency of the antenna device at the predetermined value.

It is respectfully submitted that the rejection is improper because the applied art fails to teach each element of claim 7. Specifically, it is respectfully submitted that the applied art fails to teach an antenna device that includes an antenna coil and a variable inductor that is connected in series to the antenna coil for maintaining the resonance frequency of the antenna device at the predetermined value. As a result, it is respectfully submitted that claim 7 is allowable over the applied art.

Claim 5 and 11 depend from claim 3 and include all of the features of claim 3. Thus, it is respectfully submitted that the dependent claims are allowable at least for the reason claim 3 is allowable as well as for the features it recites.

For instance, claim 5 recites that the taps are converted by switching a switch. Claim 11 recites that a predetermined communication distance is ensured by varying a drive voltage of the antenna device.

Withdrawal of the rejection is respectfully requested.

Claims 3-5, 7, 8, 10 and 11 are rejected under 35 U.S.C. 103(a) as unpatentable over Watkins in view of Suga. The rejection is respectfully traversed.

It is respectfully submitted that none of the applied art, alone or in combination, teaches or suggests the features of claim 3 as amended. Specifically, it is respectfully submitted that none of the applied art, alone or in combination, teaches or suggests an antenna device that includes an antenna coil having taps which are switched from one to another to maintain the resonance frequency of the antenna device at a predetermined value. Thus, it is respectfully submitted that one of ordinary skill in the art would not be motivated to combine the features of the applied art because such combination would not result in the claimed invention. As a result, it is respectfully submitted that claim 3 is allowable over the applied art.

It is respectfully submitted that none of the applied art, alone or in combination, teaches or suggests the features of claim 4 as amended. Specifically,

it is respectfully submitted that none of the applied art, alone or in combination, teaches or suggests an inductor which is connected in series to an antenna coil and having taps which are switched from one to another to maintain the resonance frequency of an antenna device at the predetermined value. Thus, it is respectfully submitted that one of ordinary skill in the art would not be motivated to combine the features of the applied art because such combination would not result in the claimed invention. As a result, it is respectfully submitted that claim 4 is allowable over the applied art.

It is respectfully submitted that none of the applied art, alone or in combination, teaches or suggests the features of claim 7 as amended. Specifically, it is respectfully submitted that none of the applied art, alone or in combination, teaches or suggests an antenna device that includes an antenna coil and a variable inductor that is connected in series to the antenna coil for maintaining the resonance frequency of the antenna device at the predetermined value. Thus, it is respectfully submitted that one of ordinary skill in the art would not be motivated to combine the features of the applied art because such combination would not result in the claimed invention. As a result, it is respectfully submitted that claim 7 is allowable over the applied art.

Claims 5, 10 and 11 depend from claim 3 and include all of the features of claim 3. Claim 8 depends from claim 7 and includes all of the features of claim 7. Thus, it is respectfully submitted that the dependent claims are allowable at least for the reasons the independent claims are allowable as well as for the features they recites.

For instance, claim 8 recites that the variable inductor is controlled by a control circuit for detecting a deviation of resonance frequency and controlling resonance frequency to a predetermined frequency. Claim 10 recites that the switch is a semiconductor switch which is controlled by a control circuit for detecting a deviation of the resonance frequency and controlling the resonance frequency to a predetermined frequency.

Withdrawal of the rejection is respectfully requested.

In view of the foregoing, reconsideration of the application and allowance of the pending claims are respectfully requested. Should the Examiner believe anything further is desirable in order to place the application in even better condition

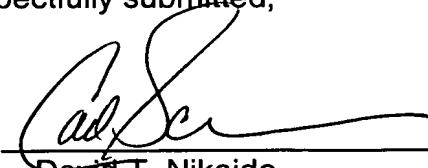
for allowance, the Examiner is invited to contact Applicants' representative at the telephone number listed below.

Should additional fees be necessary in connection with the filing of this paper or if a Petition for Extension of Time is required for timely acceptance of the same, the Commissioner is hereby authorized to charge Deposit Account No. 18-0013 for any such fees and Applicant(s) hereby petition for such extension of time.

Respectfully submitted,

Date: September 9, 2004

By:



David T. Nikaido
Reg. No. 22,663

Carl Schaukowitch
Reg. No. 29,211

RADER, FISHMAN & GRAUER PLLC
1233 20th Street, N.W. Suite 501
Washington, D.C. 20036
Tel: (202) 955-3750
Fax: (202) 955-3751
Customer No. 23353

DC166689